

- 11 -

DaimlerChrysler AG

Dr Nili

02.10.2005

Patent Claims

5

1. An integrated antenna structure, in particular for integration into plastic paneling parts, paneling parts furnished with coating films (3, 3a*, 3b, 3c; 3, 3a, 3b, 3c) as a surface finish being provided with an antenna structure integrated into an antenna film (4a; 4b),

characterized

in that the coating films are a coating film (3) comprising a coating-film carrier layer (3a*), a coating-film color layer (3b) and a coating-film clearcoat layer (3c),

the antenna film is formed by the coating-film carrier layer (3a*), into which antennas (4) are integrated, a substrate layer (2) is arranged on a surface of the antenna structure integrated into the coating-film carrier layer (3a*), a lining layer (1) in turn being arranged on said substrate layer, and

a contact-making layer (5) for making contact with the antennas (4) integrated into the coating-film carrier layer (3a*) is formed between the coating-film carrier layer (3a*) and the substrate layer (2).

2. A method for the production of an integrated antenna structure, paneling parts furnished with coating films (3, 3a*, 3b, 3c; 3, 3a, 3b, 3c) as a surface finish being provided with an antenna structure integrated into an antenna film (4a; 4b),

characterized by the following steps:

(S1) provision of a continuous, deformable coating-film

- 12 -

carrier layer (3a*), which simultaneously represents an antenna film, on a surface by means of coating or cladding or metallizing with an antenna architecture with antennas (4) and a contact-making layer (5) for making contact with said antennas (4);

(S2) layer-by-layer application of a coating-film color layer (3) and a coating-film clearcoat layer (3c) on that surface of the coating-film carrier layer (3a*) which is opposite to the surface provided with the antenna architecture;

(S3) thermoforming of the coating film (3) which is provided with the antenna architecture and is formed by the coating-film carrier layer (3a*), the coating-film color layer (3b) and the coating-film clearcoat layer (3c);

(S4) performance of a component primary shaping; and
(S5) curing of the coating-film clearcoat layer (3c).

3. The method for the production of an integrated antenna structure as claimed in claim 3, characterized in that steps S1 and S2 are executed in the opposite order.

4. The method for the production of an integrated antenna structure as claimed in claim 2 or 3, characterized in that the coating-film clearcoat layer is cured by irradiation with UV light.